Building Operator Certification (BOC)

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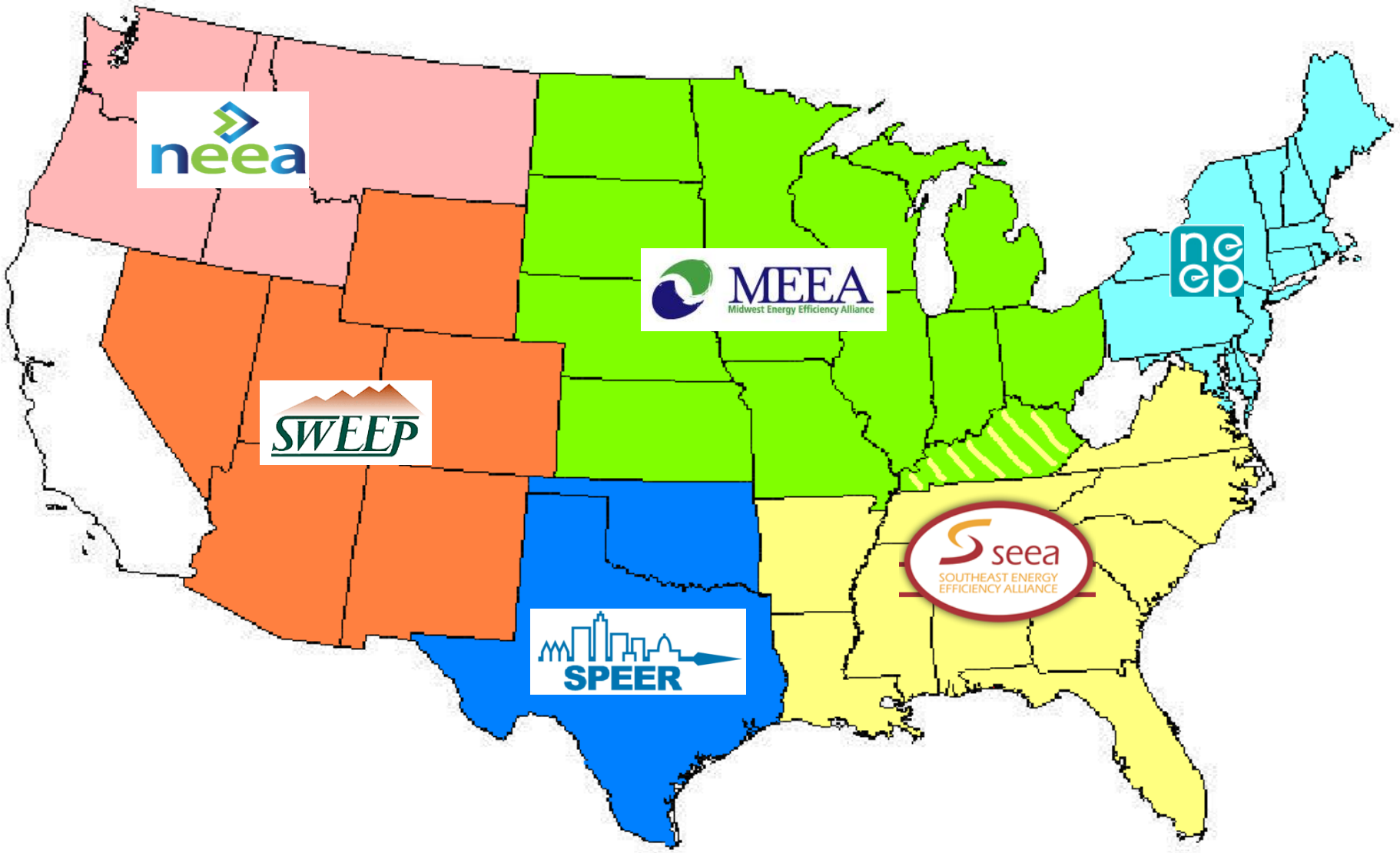
SPEER

The South-central Partnership for Energy Efficiency as a Resource

Regional Energy Efficiency Organizations



SPEER Members

Thank you to our Founding Members

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SPEER's model and mission

- Industry collaboration +
- Public-private partnerships +
- Cross- sector, interdisciplinary cooperation

In order to:

Accelerate the adoption of advanced building systems and energy efficiency products and services in the South-central US.

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What SPEER is doing

- Collaboration among key industry stakeholders
- Energy efficiency messaging and coordination
- Codes, standards, and programs harmonization
- Code compliance work with COGs
- Education and training for a wide variety of audiences (including BOC)

Overview of the BOC

- Description:
  - Eight days of instruction with exam each day
  - Five projects completed between classes
  - Small class size (typically max of 25)
  - Nationally recognized training program with demonstrated energy savings and benefits to certificants.
- Target market: Building operators/technicians
  - Not targeted at licensed engineers, facility managers, or building owners.

Overview of the BOC

- Topics include (one day each plus one elective):
  - Energy Efficient Operation of Building HVAC Systems
  - Measuring and Benchmarking Energy Performance
  - Efficient Lighting Fundamentals
  - HVAC Controls Fundamentals
  - Indoor Environmental Quality
  - Common Opportunities for Low-Cost Operational Improvement
  - Facility Electrical Systems

M&V Plan

- Begin by using deemed savings based on existing third-party studies
- Provide a third-party analysis for Texas to verify or adjust deemed savings
- IPMVP would not apply to BOC

Summary of Results

- Third party studies:
  - Navigant concluded there were savings of 119 MWh per operator per year with five years persistence in the Northwest.
  - Navigant (MN) 2011: 131 MWh, 30 kW per operator

Table 9. Program Savings – per Participant (Sample n=50)

	kWh	kW	Therms
Gross	188,599	43	4,633
BOC Attributable	130,746	30	3,219
Net of Utility Rebated Projects	42,936	11	2,276

Summary of Results

- *Even taking the lower* "Net of Utility Rebated Projects" figure, BOC is very cost effective
- A measure that saved 42,936 kWh at the avoided cost of 10.4 cents would equal $4,465 and 11kW at $80/kW avoided cost equals an additional $880 for a total of $5,125.
- With five years' persistence, this would equal $25,625 for a program that costs less than $2,000.
- Using the 119MWh used in the Northwest, this would be nearly 3x as high.

Summary of Results

As a result of the BOC program...	Mean Score* (n=205)
I am more likely to encourage my organization to take steps to improve energy efficiency at my facility	6.1
I better understand how to improve energy efficiency at my facility	5.9
I have more confidence when I take steps to improve energy efficiency at my facility that the expected level of energy savings will actually occur.	5.8
I make greater contributions to O&M discussions about energy efficiency at my facility	5.6
I have increased my knowledge of what to look for when replacing equipment	5.6

* Mean on a 7 point scale where 1=Strongly Disagree and 7=Strongly Agree.

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Source: Opinion Dynamics Corporation "Evaluation of Education and Training Programs"

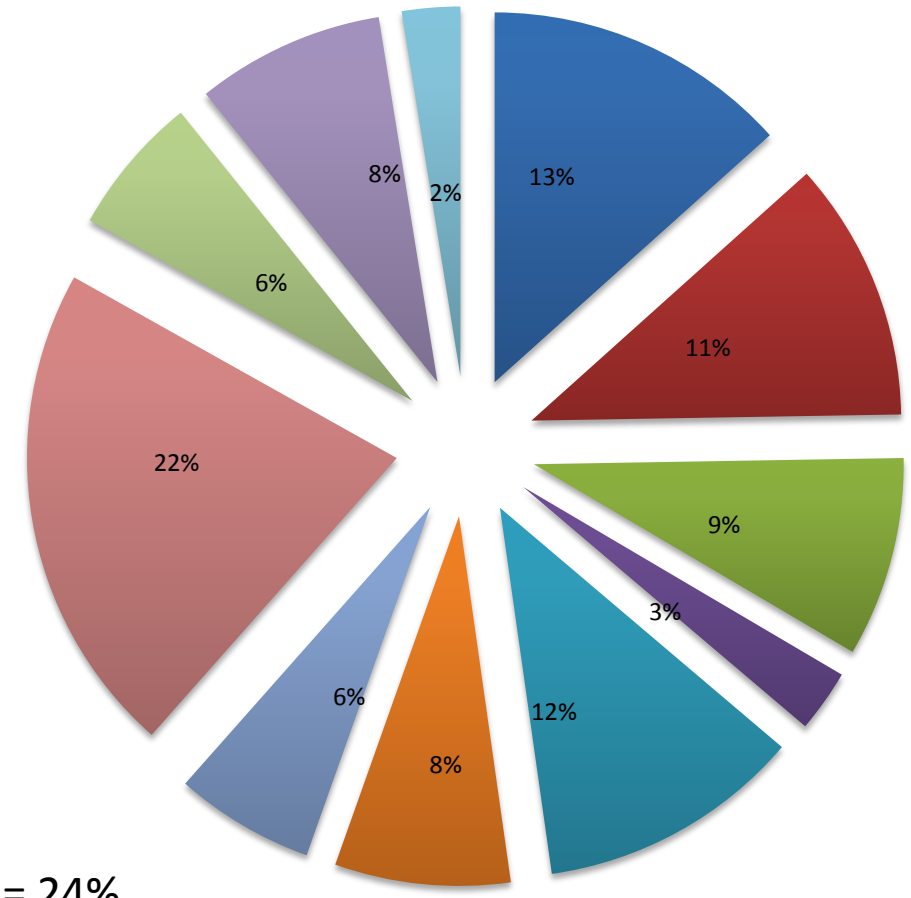
Applicability

- Very little risk as utilities would only pay for actual graduates (no upfront cost).
- Benefits include spillover effect documented in third party reports (i.e., trained operators implement more EECM's)
- Barriers to implementation: Marketing and recruitment of operators
- Strategies to overcome barriers:
  - Work with organizations (e.g. BOMA, IFMA, etc.)
  - Work with workforce systems (colleges, boards)
  - Target key sectors (public, hospitals, etc.)
  - Coordination with utilities

Market

- No other building operator programs as extensive and focused on efficiency
- Massive potential in Texas with large square footage of commercial buildings and very little efficiency focused training.

Market Sectors Participating in BOC (2011)



- College -13%
- Government - 11%
- Healthcare - 6%
- Hospitality - 3%
- K-12 School - 11%
- Manufacturing - 8%
- Military - 6%
- Municipality - 22%
- Other - 6%
- Property Mgmt - 8%
- Retail - 3%

Education = 24%
Other public = 39%
Private = 28%
Other = 6%

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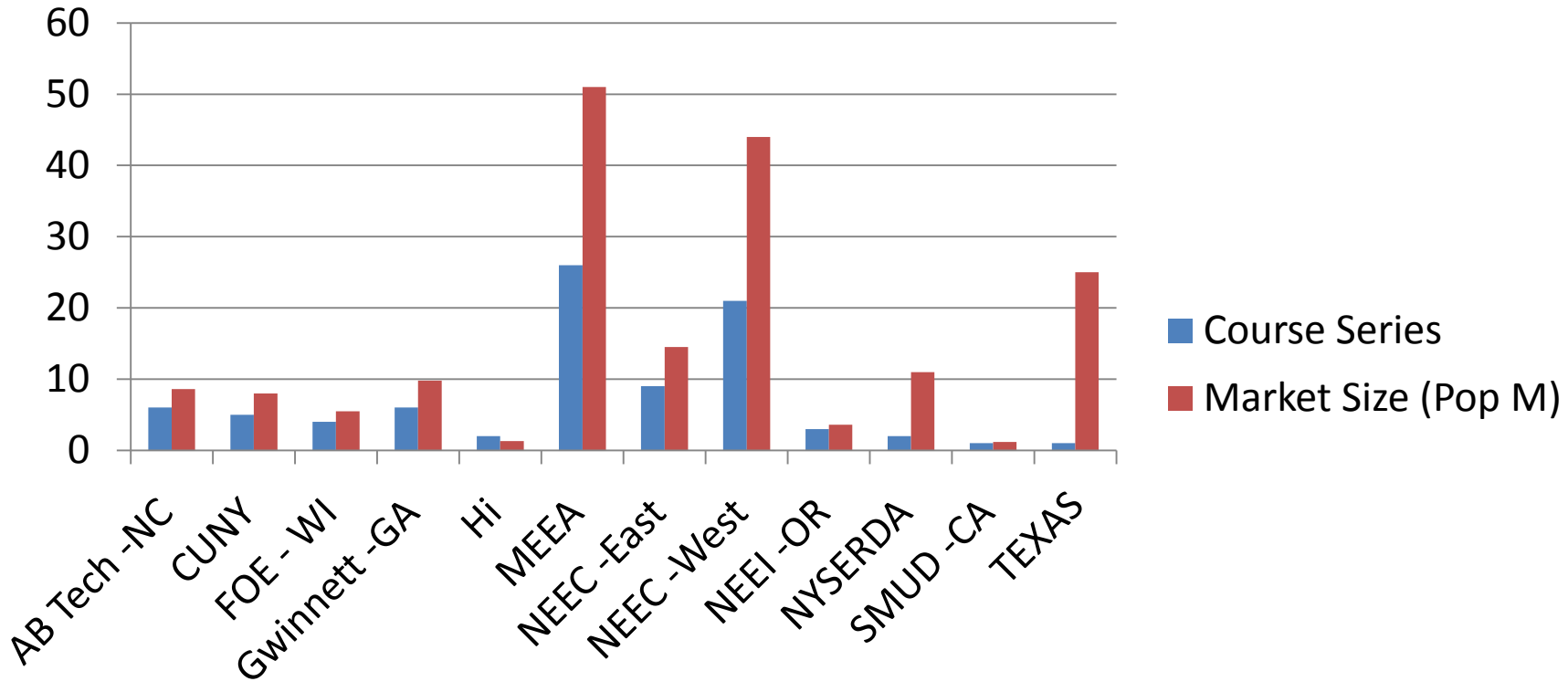
The BOC National Marketing Plan 2012

Market potential

Average in rest of country is one course per 1.8 million of population. This would translate to ~14 courses per year in Texas.



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Conclusions

- >$25,000 in energy and demand savings per operator
- Very cost-effective <$2,000 per operator
- Nationally recognized certification
- First class in Texas just completed
- Massive potential for more courses and energy savings as market transformation program

More information at

www.eepartnership.org

Thank you

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